

CALIFORNIA STATE BOARD OF HEALTH

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THE CALIFORNIA STATE BOARD OF HEALTH

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The meetings of the California State Board of Health are held regularly the first Saturday of each month, but the quarterly meetings required by law to be held at the Capitol of the State are ordinarily designated as January, April, July, and October.

By courtesy of the University of California the Food and Drug Laboratory and the Hygienic Laboratory are located in University buildings at Berkeley, California.

Address all general communications to the

SECRETARY, Sacramento, California.

MAY BULLETIN.

COMMENTS.

The Typhoid Harvest. What would have happened to our national peace of mind and our commerce, if there had occurred in 1910-11 a half million cases of cholera with fifty thousand deaths! We know what happened to Italy during these two years with only sixteen thousand cases and six thousand deaths; and to Russia during its terrible experiences with cholera in the past four years. To the casual observer it would not seem to make much difference whether the disease were called cholera or by some other name, but it evidently does make a difference, for during the period in which the newspapers have been filled with Associated Press dispatches concerning cholera-ridden Russia and Italy, the typhoid fever-ridden United States has not been criticised by a line of print.

Typhoid fever takes 25,000 lives a year in this country and causes the expense, anxiety and loss of efficiency represented by 250,000 cases of typhoid illness a year, according to United States figures.* Thirty-three European cities, in Russia, Sweden, Norway, Austria-Hungary, Germany, Denmark, France, Belgium, Holland, England, Scotland, and Ireland, aggregating 31,500,000 population, show a death rate from typhoid fever of 6.5 per 100,000 population, as against 25 per 100,000 population for fifty American cities of over 100,000, aggregating over 20,000,000 population. Such figures are not creditable to the United States, but they prove that one of our big national problems is the control of water-borne diseases. They also prove that our safety from cholera depends solely on the success of the U. S. Public Health Service in keeping cholera *out* of the country.

Every summer and autumn typhoid reaps its harvest in California—six hundred deaths a year in this one State! The loss of this number of citizens in any spectacular way would rouse the public beyond the possibility of further indifference. It is the spectacular feature of cholera that constitutes our greatest safeguard. A man sickens one day, dies the next, and is followed to the cemetery within the week by half his fellow-townsmen. This rouses the public and the disease is fought desperately and with success. Typhoid works more adroitly. To be sure, it makes its spectacular raids, too, but for the most part it plays the part of the Apache, striking swiftly and surely here and there, only to be far upon the trail toward other victims before the news reaches the neighboring settlement. It is hard, under such conditions, to rouse the nation to a policy of extermination.

In fighting such diseases as typhoid fever and malaria the people of the United States must be taught the significance of death rates and annual totals before their coöperation can be expected. In the mean time the typhoid harvest will continue.

*Data taken from Reprint No. 76, U. S. P. H. Reports (1912), by Allan J. McLaughlin.

The Domestic Use of Untreated Surface Waters.

The installation of treatment systems for the purification of the water supplies of cities drawn from surface streams has usually been accompanied by a lowered general death rate and a special reduction in deaths from typhoid fever. Yet it has frequently happened that, prior to the purification treatment, there had never been any conspicuous outbreak of water-borne disease in the community. This is true of the first group of cities given below. The deaths from typhoid fever, however, during the past five years, as contrasted with the deaths in the cities of the second group, present a basis for interesting study. Probably water is not the only factor in the prevalence of typhoid in the first group, but only the installation of adequate filtration systems, or provision for a pure water supply from other sources, will show how far other factors enter into the problem.

COMMENTS.

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Group	Estimated population: 1908.	Federal census population: 1910.	Deaths: 1907.		Deaths: 1908.		Deaths: 1909.		Deaths: 1910.		Deaths: 1911.		Total deaths: 1907 to 1911
			All causes.	Typhoid Fever.									
I. River Cities—													
Redding	3,850	3,752	86	8	90	2	54	1	51	0	65	3	346
Red Bluff	2,864	3,530	62	3	60	2	76	2	63	3	56	3	317
Colusa	1,529	1,582	12	1	26	5	19	2	22	4	21	3	100
Sacramento	31,602	44,696	713	25	755	30	698	21	734	14	828	19	3,728
Rio Vista	706	884	8	0	10	2	5	0	12	0	12	2	47
Totals	40,551	54,444	881	37	941	41	852	26	882	21	982	30	4,538
II. Coast Cities—													
Pacific Grove	1,475	2,384	51	0	41	0	60	0	40	0	46	0	238
Monterey	1,820	4,923	40	1	76	0	82	3	62	1	59	0	319
Watsonville	4,632	4,446	73	2	103	2	108	0	85	1	70	0	434
Salinas	4,080	3,736	58	0	63	1	68	2	51	0	52	1	292
Santa Barbara	7,163	11,659	190	6	175	1	203	3	223	5	215	4	1,006
San Diego	19,620	39,578	666	7	701	5	601	0	687	1	817	7	3,472
Totals	38,790	66,726	1,078	16	1,159	9	1,117	8	1,148	8	1,259	12	5,761

Note.—These groups were selected and published in 1908; Group II being made up to give approximately at that time the same total of population appearing for Group I. Since 1908 changes of population and methods of deriving water supply have changed somewhat in both groups, but the five-year period has been carried out to illustrate the general argument that surface unheated water supplies are dangerous.

It will be seen by this table that in Group I there were fewer deaths from all causes in Group I every year, but that, for typhoid, Group I had from two to four times as many cases as Group II. Stated in a different way—Group I shows for the entire five-year period one typhoid death to each 29.3 deaths from all causes; as against one typhoid death to each 108.7 deaths from all causes in Group II.

Of course, 155 deaths from typhoid fever in five years is not a large number for any group of five cities, but it represents at least 1,550 cases of the disease that should not have occurred. This, however, is merely an academic statement. The actual elimination of typhoid requires much to be done—much in the way of money and of personal coöperation among various classes of people. Such coöperation and expenditures will not ordinarily be forthcoming for protection against such low loss of life as given in the above illustration, but the public should be taught the truth that lies behind such a record, *i. e.*, wherever typhoid smolders as it is doing in these river cities there is always a possibility that at any time it may flare up into a most disastrous epidemic. It is to inhibit this potential menace, as well as incidentally to save the few from sickness and death, that every modern method of combating typhoid fever should be employed.

* * * * *

The Fly and the Surface Privy.

Much has been written during the past two years about the "typhoid" fly. It is not easy, however, to obtain concrete data on fly-borne epidemics. The figures,* therefore, for Jacksonville, Florida, are especially valuable.

A careful epidemiological study was made of 329 cases of typhoid in 1910. These cases bore no relation to milk, water, or sewage. They had no common factors except that collectively they made a seasonal curve very closely approximating the fly prevalence curve. The city has many open privies scattered throughout its area. Even in the sewered portion there exist a good many. The investigation showed that probably 25,000 people were using open privies accessible to flies. The general records for several years, during which case-records had been kept, showed typhoid especially prevalent in the unsewered or privy sections of the city. The 329 cases studied were divided as follows: One hundred and thirty-two in the sewered portion, 197 in the dry closet district. The city passed an ordinance regulating the construction and maintenance of dry closets, requiring them to be fly-proof. Without other apparent changes in the city affecting typhoid prevalence the total cases in 1911 dropped to 158—93 being in the sewered district and only 65 in the dry closet district.

California is filled with beautiful summer resorts that are dependent on the dry earth closet. These summer hotels are particularly dangerous to the population of the entire State, because the "typhoid" fly may travel between the open privy and the dining table all summer, possibly infecting large numbers of persons, without any one of the victims ever remaining long enough to become ill at the hotel. This is possible because most guests stay less than two weeks at any one of these resorts, and will consequently be at home again before they become ill after infection with typhoid.

*Published in the Florida Health Notes for April, 1912, by Dr. C. E. Terry, Jacksonville City Health Officer.

The following conclusions as given in the April, 1912, "Health Notes" of the Florida State Board of Health are worth transcribing here as applicable to our mountain resorts:

"First. Where infectious material, as in open privies, exists in a community with exposed food supplies together with an abundance of flies, active measures against this insect are a public health necessity.

Second. The house fly may be practically eliminated from municipalities by the proper construction of horse stables with especial reference to water-tight, well-drained floors and the prompt removal of manure; the rendering fly-proof of surface privies and the abolition of garbage dumps.

Third. The burying of infectious material if fly-blown, at any practical depth, will not prevent either the maturing of the contained larvæ or the dissemination of infection by the flies hatching therefrom.

Fourth. Trapping, especially early in each fly season, is a practical auxiliary measure."

* * * * *

The Dairy and the Bacterial Count.

Milk has ever been the great battleground between the anti-germ eaters and the germ-ignorers. Both these factions of pseudo-scientific thought do great harm. Says the anti-germ eater, "I wouldn't touch milk for the world. It is full of germs! unless it is hard boiled and then it is indigestible," etc. Says the germ-ignorer, "You are a poor lunatic. The scientists themselves are not consistent. They count the germs in milk and tell you there should not be more than 500 or 10,000 (as the case may be) to the drop, if it is to be good milk. Then in the same breath they say the lactic acid bacillus (the germ most frequent in milk) is good for you. This germ theory is all nonsense anyway. Eat, drink milk, and be merry, for its only the thought of germs that can hurt you."

The bacteriologist finds it hard to explain to the public that the bacterial count only gives him an index to the age and cleanliness and temperature conditions under which the milk was handled. It does not replace the dairy inspection, or examination of the cows. It is, however, a most valuable index, and often leads, through the detection of sudden increases in the bacterial count, to special dairy inspections which are the means of preventing widespread epidemics of disease among milk users. The safeguarding of milk from contamination by typhoid discharges is one of the great methods of fighting the disease. Palo Alto had no rigid inspection regulations for dairies prior to 1903. In that year the lightning struck, apparently from a clear sky, but investigation showed that the great epidemic of typhoid which caused 238 cases, with nearly a score of deaths, was due (not to lightning) but to the kind-heartedness of a farmer's wife and the friendliness of her neighbors. Had this farmer's wife not invited her sick cousin (a laborer ill with typhoid fever in San Francisco) to come to her house to be nursed by her, and had the neighboring dairyman not attended the funerals of the cousin and the farmer's wife when they both died of the fever, the dairyman and his child would not have developed typhoid, and the milk which he handled would not have been contaminated, and—Palo Alto would not have had its great epidemic.

**The Summer Camp
and the Transient Laborer.**

When a patient is recovering from typhoid fever, the physician frequently says: "Now I want you to spend three or four weeks in the mountains regaining your strength before you go back to your work." There is no examination of the patient's discharges to make sure he will not distribute typhoid bacilli in the fly infested or water contaminating toilets of the hotels to which he will go. Luckily most of these patients are not dangerous after they are able to travel. The records of the State Board of Health, however, show some notable and disastrous exceptions to this rule. The release from typhoid fever isolation precautions should be much more carefully supervised than is the case at present. Rocklin and Loomis suffered in 1910 from a typhoid epidemic because a transient laborer, convalescing from typhoid chanced to join a camp of laborers located on the banks of the surface ditch supplying the towns with "pure" mountain drinking water.

* * * * *

**The Human
Carrier of Typhoid.**

The valuable piece of scientific work, recently done by Dr. W. A. Sawyer, Director of the Bureau of the Hygienic Laboratory, in tracing the source of typhoid fever on the ship Acme, beautifully illustrates another phase of the typhoid control problem. This ship had developed among its crew so many victims of typhoid in the course of a few years that it became known among sailors as the fever ship. The investigation finally demonstrated that one of the crew was the agent in transmitting the disease to all the others (some twenty-eight in all). This man was apparently well and entirely unconscious of being a source of danger to the lives of his fellow sailors. When he took the common drinking cup and dipped it into the barrel of drinking water he did not know he was periodically contaminating this water with typhoid bacilli which escaped from his soiled hands, to be subsequently swallowed by other susceptible members of the crew. This man represents a type of persons who are capable of spreading the disease long after all physical evidences of their having been ill have disappeared. There are still other persons similarly dangerous to the public, but who have never been known to have had the disease itself. These persons are known as "carriers."

Not until the public realizes that there are many ways of combating typhoid fever and that the battle must be waged all along the line, will we be able to make much further progress in lowering the death rate from this disease.

REPORT OF BUREAU OF ADMINISTRATION FOR APRIL.

JOHN F. LEINEN, Director, Executive Division.

During the month of April there were 2,184 letters received and 2,386 letters sent. One hundred and seventy-three subjects were treated. This increase over previous months is due to numerous requests from local communities for advice and literature concerning the best means of eradicating house flies and mosquitoes.

The continued spread of rabies and new outbreaks of smallpox also added to the general routine.

Advice regarding precautionary measures against the possible spread of typhoid fever during the summer months has been furnished to a number of persons throughout the State, especially those contemplating vacations.

Municipalities and corporations sewerering into streams have had their attention called to the stream pollution law of 1911.

Outbreaks of communicable diseases have been followed up and health officers have been assisted in preventing the spread of infection. Complete histories of cases have been obtained.

Letters have been received asking for information and advice relative to the construction of septic tanks, fresh air sleeping porches and tents, garbage disposal, health laws and ordinances, housing conditions, infant mortality, milk and meat, industrial diseases, pure food and drug regulations, water examinations, quarantine, contagious and infectious diseases, ventilation, disinfection, sanitation of schools, railroad cars and river craft, slaughterhouses, and many other subjects too numerous to mention.

REPORT OF BUREAU OF VITAL STATISTICS FOR MARCH.

GEORGE D. LESLIE, Statistician.

State Totals and Annual Rates.—The following table shows for California as a whole the birth, death, and marriage totals for the current and preceding months in comparison with those for the corresponding months of a year ago, as well as the annual rates per 1,000 population represented by the totals for the current and preceding months. The rates are based on an estimated midyear population of 2,579,874 for California in 1912, the estimate having been made by the Census Bureau method with slight modifications.

Birth, Death and Marriage Totals, with Annual Rates per 1,000 Population for Current and Preceding Months for California: March.

Month.	MONTHLY TOTAL.		Annual rate per 1,000 population: 1912.
	1912.	1911.	
March—			
Births -----	3,306	2,818	15.1
Deaths -----	3,363	3,001	15.4
Marriages -----	1,816	1,705	8.3
February—			
Births -----	3,062	2,530	15.0
Deaths -----	3,080	2,788	15.0
Marriages -----	2,184	1,785	10.7

The birth, death, and marriage totals for March, as for February, were much greater in 1912 than in 1911, the birth totals increasing especially. Thus the birth totals in 1912 exceeded those in 1911 by 488 for March (3,306 as compared with 2,818), and by 532 for February (3,062 against 2,530), as well as by 458 for January (3,059 against 2,601).

County Totals.—The first table on the following page shows the monthly birth, death, and marriage totals for the principal counties of the State, the list being limited to counties having a population of at least 25,000 according to the Federal Census of 1910. Totals are also shown for San Francisco and the other bay counties (Alameda, Contra Costa, Marin, and San Mateo), as well as for Los Angeles and Orange counties together.

City Totals.—The second table on the following page gives the birth and death totals for the principal freeholders' charter cities, the list including all chartered cities with a census population of at least 15,000 in 1910. The totals are given likewise for San Francisco in comparison with Oakland, Alameda, and Berkeley, the three cities adjoining one another on the east shore of San Francisco Bay, as well as for Los Angeles in comparison with neighboring chartered cities (Long Beach, Pasadena, Pomona, and Santa Monica).

Birth, Death, and Marriage Totals, for Principal Counties: March.

County.	March, 1912.		
	Births.	Deaths.	Marriages.
California -----	3,306	3,363	1,816
<i>Counties of more than 25,000 population (1910):</i>			
Alameda -----	327	294	137
Butte -----	23	40	25
Contra Costa -----	27	37	9
Fresno -----	156	98	56
Humboldt -----	31	36	14
Kern -----	62	47	34
Los Angeles -----	855	797	459
Marin -----	17	27	82
Orange -----	55	54	74
Riverside -----	47	52	24
Sacramento -----	127	112	61
San Bernardino -----	90	89	35
San Diego -----	73	118	71
San Francisco -----	561	652	367
San Joaquin -----	39	75	38
San Mateo -----	31	32	24
Santa Barbara -----	43	31	21
Santa Clara -----	126	145	57
Santa Cruz -----	58	34	5
Solano -----	53	25	7
Sonoma -----	44	50	21
Tulare -----	34	43	25
<i>Selected groups:</i>			
San Francisco and other bay counties-----	963	1,042	619
Los Angeles and Orange counties-----	910	851	533

Birth and Death Totals, for Principal Cities: March.

City.	March, 1912.	
	Births.	Deaths.
Freeholders' charter cities	2,107	2,058
Cities of more than 15,000 population (1910):		
Alameda	40	27
Berkeley	47	34
Fresno	70	36
Long Beach	31	27
Los Angeles	589	516
Oakland	225	186
Pasadena	44	59
Riverside	19	23
Sacramento	112	101
San Diego	51	92
San Francisco	561	652
San Jose	43	44
Stockton	24	46
Selected groups:		
San Francisco	561	652
Oakland, Alameda and Berkeley	312	247
Total, Bay cities	873	899
Los Angeles	589	516
Neighboring cities	95	104
Total	684	620

Causes of Death.—The following table shows the classification of deaths in California for the current month, in comparison with the preceding month:

Deaths from Certain Principal Causes, with Proportion per 1,000 Total Deaths for Current and Preceding Months for California: March.

Cause of death.	Deaths: March.	Proportion per 1,000.	
		March.	February.
ALL CAUSES	3,363	1,000.0	1,000.0
Typhoid fever	25	7.4	5.8
Malarial fever	6	1.8	0.3
Smallpox	—	—	0.3
Measles	29	8.6	5.2
Scarlet fever	4	1.2	1.3
Whooping-cough	11	3.3	2.9
Diphtheria and croup	20	6.0	4.9
Influenza	24	7.1	3.3
Other epidemic diseases	20	6.0	3.9
Tuberculosis of lungs	413	122.8	139.3
Tuberculosis of other organs	81	24.1	19.5
Cancer	203	60.4	54.9
Other general diseases	175	52.0	37.3
Meningitis	29	8.6	10.1
Other diseases of nervous system	257	76.4	74.0
Diseases of circulatory system	610	181.4	176.6
Pneumonia and broncho-pneumonia	317	94.3	106.5
Other diseases of respiratory system	97	28.8	28.2
Diarrhea and enteritis, under 2 years	65	19.3	17.9
Diarrhea and enteritis, 2 years and over	20	5.9	9.7
Other diseases of digestive system	182	54.1	54.2
Bright's disease and nephritis	203	60.4	59.1
Childbirth	26	7.7	11.0
Diseases of early infancy	91	27.1	36.4
Suicide	66	19.6	20.5
Other violence	227	67.5	72.1
All other causes	162	48.2	44.8

In March there were 610 deaths, or 18.1 per cent of all, from diseases of the circulatory system, and 494, or 14.7 per cent from various forms of tuberculosis. Heart disease thus led tuberculosis greatly.

Other notable causes of death were: Diseases of the respiratory system, 414; violence, 293; diseases of nervous system, 286; diseases of digestive system, 267; Bright's disease and nephritis, 203; cancer, likewise 203; and epidemic diseases, 139.

The deaths from epidemic diseases were as follows: Measles, 29; typhoid fever, 25; influenza, 24; diphtheria and croup, 20; whooping-cough, 11; and all other epidemic diseases, 30.

The deaths from the three leading epidemic diseases reported for the month were distributed by counties as follows:

Measles.	Typhoid Fever.	Influenza.
Butte ----- 2	Alameda ----- 2	Alameda ----- 1
Contra Costa ----- 1	Contra Costa ----- 1	Fresno ----- 2
Kern ----- 1	Fresno ----- 2	Kings ----- 1
Placer ----- 1	Humboldt ----- 2	Los Angeles ----- 3
Sacramento ----- 3	Imperial ----- 1	Plumas ----- 1
San Francisco ----- 15	Kern ----- 4	Sacramento ----- 3
San Joaquin ----- 1	Los Angeles ----- 3	San Diego ----- 2
Santa Clara ----- 2	Marin ----- 1	San Francisco ----- 1
Solano ----- 1	Merced ----- 1	San Joaquin ----- 2
Sonoma ----- 2	Napa ----- 1	San Luis Obispo ----- 2
	Riverside ----- 1	Santa Barbara ----- 1
Total ----- 29	San Bernardino ----- 1	Santa Clara ----- 1
	San Diego ----- 2	Sierra ----- 1
	San Francisco ----- 1	Stanislaus ----- 1
	Santa Clara ----- 2	Tehama ----- 2
	Total ----- 25	Total ----- 24

Geographic Divisions.—The following table presents data for geographic divisions, including the metropolitan area, or San Francisco and the other bay counties (Alameda, Contra Costa, Marin, and San Mateo), in comparison with the rural counties of Northern and Central California:

Deaths from Main Classes of Diseases, for Geographic Divisions: March.

Geographic divisions.	Deaths: March.										
	All causes	All	Epidemic	Tuberculosis	Cancer	Diseases of	Diseases of	Diseases of	Violence	All other	
			diseases	(all forms)		nervous	circulatory	digestive	and nephritis	causes	
THE STATE-----	3,363	139	494	203	286	610	414	267	203	293	454
<i>Northern California</i> -----	385	23	42	19	27	79	45	29	18	39	64
Coast counties -----	198	8	24	13	18	43	20	15	8	19	30
Interior counties -----	187	15	18	6	9	36	25	14	10	20	34
<i>Central California</i> -----	1,812	85	218	120	144	334	257	163	97	157	237
San Francisco -----	652	31	77	39	50	124	89	66	35	55	86
Other bay counties -----	390	12	45	38	34	83	56	24	22	34	42
Coast counties -----	237	8	26	14	22	49	38	18	10	16	36
Interior counties -----	533	34	70	29	38	78	74	55	30	52	73
<i>Southern California</i> -----	1,166	31	234	64	115	197	112	75	88	97	153
Los Angeles -----	797	19	166	50	74	145	70	45	61	65	102
Other counties -----	369	12	68	14	41	52	42	30	27	32	51
<i>Northern and Central California</i> -----	2,197	108	260	139	171	413	302	192	115	196	301
Metropolitan area -----	1,042	43	122	77	84	207	145	90	57	89	128
Rural counties -----	1,155	65	138	62	87	206	157	102	58	107	173

Sex and Age Periods.—The proportion of the sexes among the 3,363 decedents in March was: Male, 2,038, or 60.6 per cent; and female, 1,325, or 39.4 per cent.

The following table shows the age distribution, by numbers and per cents, of deaths classified by sex:

Deaths Classified by Sex and Age Periods, with Per Cents by Age Periods, for California: March.

Age period.	Deaths.			Per cent.		
	Total	Male.	Female.	Total	Male.	Female.
ALL AGES-----	3,363	2,038	1,325	100.0	100.0	100.0
Under 1 year-----	301	168	133	8.9	8.2	10.1
1 to 4 years-----	150	70	80	4.5	3.4	6.0
5 to 14 years-----	95	47	48	2.8	2.3	3.6
15 to 24 years-----	184	104	80	5.5	5.1	6.0
25 to 34 years-----	308	194	114	9.2	9.5	8.6
35 to 44 years-----	400	252	148	11.9	12.4	11.2
45 to 54 years-----	392	254	138	11.6	12.5	10.4
55 to 64 years-----	437	279	158	13.0	13.7	11.9
65 years and over-----	1,096	670	426	32.6	32.9	32.2

This table shows that relatively more females than males died at under 1 year, 1 to 4 years, 5 to 14 years, 15 to 24 years, and at 65 years and over. In the age periods from 25 to 64 years, however, there were relatively more deaths among men than among women, generally speaking. That is, death comes to men mainly during years of active mature life, but takes females especially in infancy, childhood, and youth, as well as at extreme old age.

Occupations.—The table below gives, for deaths 15 years and over, the number of men and women for whom some occupation was reported in contrast with those for whom no gainful occupation was shown:

Deaths 15 Years and Over Classified by Sex and Occupation, with Per Cents by Sex, for California: March.

	Deaths.			Per cent male.	Per cent female.
	Total.	Male.	Female.		
15 years and over-----	2,817	1,753	1,064	62.2	37.8
Occupation reported -----	1,569	1,478	91	94.2	5.8
No gainful occupation-----	1,248	275	973	22.0	78.0

Of the 1,569 decedents for whom occupations were reported the males numbered 1,478, or 94.2 per cent, and the females only 91, or 5.8 per cent.

The following table shows the distribution of male decedents 15 years and over, engaged in the main kinds of occupation:

Deaths of Males 15 Years and Over Engaged in Gainful Occupations, Classified by Kind of Occupation, with Per Cents, for California: March.

Kind of occupation.	Males 15 years and over.	
	Deaths.	Per cent.
All occupations -----	1,478	100.0
Professional -----	80	5.4
Clerical and official -----	122	8.3
Mercantile and trading -----	130	8.8
Public entertainment -----	33	2.2
Personal service, police and military -----	40	2.7
Laboring and servant -----	283	19.1
Manufacturing and mechanical industry -----	287	19.4
Agriculture, transportation, and other outdoor -----	487	33.0
All other occupations -----	16	1.1

Of the 1,478 male decedents for whom occupations were reported 487, or 33.0 per cent, were engaged in agriculture, transportation and other outdoor pursuits; 287, or 19.4 per cent, in manufacturing and mechanical industry; 283, or 19.1 per cent, in laboring and servant work; and altogether 421, or 28.5 per cent, in professional, clerical and official, mercantile and trading, and all other occupations.

Morbidity Report for March, 1912.

Disease.	Cases.	Places.
Smallpox -----	81	18
Scarlet fever -----	98	23
Diphtheria -----	92	22
Mumps -----	157	12
Measles -----	759	32
German measles -----	1	1
Pneumonia -----	82	11
Tuberculosis -----	163	18
Typhoid -----	36	15
Poliomyelitis -----	3	3
Syphilis -----	2	2
Gonorrhœa -----	9	5
Chickenpox -----	76	9
Whooping cough -----	38	5
Cerebro-spinal meningitis -----	4	3
Hookworm -----	20	1
Erysipelas -----	30	6
Tuberculous meningitis -----	3	3
Glanders -----	1	1
Malaria -----	6	2
Influenza -----	32	2
Tonsilitis -----	29	1
Croup -----	7	2
Trachoma -----	2	2
Leprosy -----	1	1
Pemphigus -----	1	1
Scabies -----	1	1
Rotheln -----	1	1
Total -----	1,735	203

REPORT OF BUREAU OF THE HYGIENIC LABORATORY FOR APRIL.

WILBUR A. SAWYER, M.D., Director.

Glanders.

Except on these rare instances when it is suspected that human beings are infected with glanders the State Hygienic Laboratory does not make examinations for this disease. The work of controlling glanders among horses and mules of California, involving both field and laboratory investigations, is under the direction of Charles Keane, D.V.S., State Veterinarian, with office at Sacramento. In order to assist in this important work, the State Board of Health has given the use of space and equipment in the State Hygienic Laboratory to Charles A. Pyle, D.V.S., in order that he may assist Dr. Keane by carrying on complement fixation tests of blood for glanders.

During the month of March, 1912, Dr. Pyle completed the preparation of the materials needed in the tests and examined the blood of fifteen horses. Eight of these gave positive results. Seven of the specimens failed to show evidence of glanders, and in one case the result was in doubt. The United States Bureau of Animal Industry has found complement fixation tests of blood to be of decided value in examinations for glanders, and it is gratifying to find this delicate method in use in our State.

Specimens for examination for glanders should not be sent to this laboratory except under instruction from Dr. Keane. As has already been stated, examinations for glanders in horses are conducted by Dr. Keane's staff and it is only for the purpose of obtaining the necessary laboratory facilities that part of the work is carried on in the State Hygienic Laboratory.

State Medical Meeting.

At the annual session of the State Medical Society held at Del Monte, April 16, 17, and 18, the State Hygienic Laboratory maintained a scientific exhibit. Microscopic slides of brain tissue showing Negri bodies from cases of human and canine rabies in the present epidemic were shown. The method of preparing antirabic virus for use in the Pasteur treatment was illustrated by an exhibit of fixed virus, rabbit cord in Pasteur drying bottle, and the finished material. Sample mailing outfits for use in sending specimens to the State Hygienic Laboratory or its three branches were exhibited. One of the bacteriological instruction outfits for use by teachers was shown as an illustration of the part being taken in the instruction of the public along public health lines.

Division of Biological Examinations.

Summary of Examinations Made in the California State Hygienic Laboratory During the Month of April, 1912.

Condition suspected.	Positive.	Negative.	Inconclusive.	Total.
Main Laboratory at Berkeley:				
Anthrax -----		4	-----	4
Diphtheria -----	43	73	2	118
Gonococcus -----	6	2	-----	8
Malaria -----		6	-----	6
Rabies -----	20	4	-----	24
Tuberculosis -----	8	37	-----	45
Typhoid -----	1	31	1	33
Water -----		2	-----	2
Miscellaneous -----	1	1	1	3
				243
Northern Branch at Sacramento:				
Tuberculosis -----	1	1	-----	2
				2
San Joaquin Valley Branch at Fresno:				
Diphtheria -----		3	-----	3
Tuberculosis -----	1	2	-----	3
Typhoid -----		4	-----	4
				10
Southern Branch at Los Angeles:				
Diphtheria -----	3	5	-----	8
				8
Total number of examinations				263

Division of Preventive Therapeutics.

Pasteur Treatment for the Prevention of Rabies by the State Hygienic Laboratory During the Month of April, 1912.

	Treatment commenced.	Treatment completed.
Main Laboratory at Berkeley-----	0	0
Northern Branch at Sacramento-----	2	0
San Joaquin Valley Branch at Fresno-----	2	0
Southern Branch at Los Angeles-----	0	0
Laboratory of Sacramento Board of Health, by deputized bacteriologist -----	0	0
Laboratory of San Francisco Board of Health, by deputized bacteriologist -----	28	17
Laboratory of Los Angeles Board of Health, by deputized bacteriologist -----	0	1
Laboratory of Letterman General Hospital, Presidio, by deputized bacteriologist -----	2	4
	34	22

Bureau of the Hygienic Laboratory.

Participation in Instruction in Public Health During April, 1912.

Main Laboratory at Berkeley:

Bacteriological instruction outfits sent out-----	3
Bacteriological instruction outfits in use-----	26
Exhibits loaned from hygienic museum, sent out-----	0
Exhibits loaned from hygienic museum, in use-----	2
Number of models or other pieces of apparatus in above exhibits-----	9
Lectures or talks by the Director-----	4

Division of Epidemiological Investigations.*Epidemiological Investigations During April, 1912.*

Main Laboratory at Berkeley:

Special investigations by the Director.....

2

Investigation of an ambulatory case of typhoid in traveling inspector for steamship company.

Collection of statistics regarding the prevalence of rabies in the State of California from April 1, 1911, to April 1, 1912.

REPORT OF PURE FOOD AND DRUG LABORATORY FOR APRIL.

PROFESSOR M. E. JAFFA, Director.

The work of the State Laboratory during April has been of a miscellaneous character, the samples examined including those of milk, flavoring syrups, extracts, beverages, meats, vinegars, and condiments. It may be said that in addition to the examination of what are termed "official samples," that is, samples collected and submitted by inspectors, considerable work has been done on the supplies for the state hospitals and other state institutions. It may be further stated that since such examinations have been conducted at the State Laboratory, the quality of supplies furnished to the institutions of the State are far better than was the quality previous to the time when samples were submitted to this laboratory for analysis.

Definitions.

Definitions of terms adopted by the Association of Feed Control Officials of the United States, in meeting at Columbus, Ohio, Nov. 17 and 18, 1911.

Meal is the clean, sound, ground product of the entire grain, cereal or seed which it purports to represent, provided that the following meals, qualified by their descriptive names, are to be known as, viz.: *Corn germ meal* is a product in the manufacture of starch, glucose and other corn products and is the germ layer from which a part of the corn oil had been extracted. *Linseed meal* is the ground residue after extraction of part of the oil from ground flax seed.

Grits are the hard flinty portions of Indian corn without hulls and germ.

Hominy meal, *hominy feed* or *hominy chop* is a mixture of the bran coating, the germ and a part of the starchy portion of the corn kernel.

Corn feed meal is the sifting obtained in the manufacture of cracked corn and table meal made from the whole grain.

Corn bran is the outer coating of the corn kernel.

Wheat bran is the coarse outer coatings of the wheat berry.

Shorts or *standard middlings* are the fine particles of the outer and inner bran separated from bran and white middlings.

Shipstuff or *wheat mixed feed* is a mixture of the products other than the flour from the milling of the wheat berry.

Red dog is a low grade wheat flour containing the finer particles of bran.

Oat groats are the kernels of the oat berry with the hulls removed.

Oat shorts are the covering of the oat grain lying immediately inside the hull, being a fuzzy material carrying with it considerable portions of the fine floury part of the groat obtained in the milling of rolled oats.

Oat middlings are the floury portion of the groat obtained in the milling of rolled oats.

Oat hulls are the outer coverings of the oat grain.

Rice hulls are the outer covering of the rice grain.

Rice bran is the cuticle beneath the hull.

Rice polish is the finely powdered material obtained by polishing the kernel.

Flax plant by-product is that portion of the flax plant remaining after the separation of the seed, the baste fiber and the portion of the shives, and consists of flax shives, flax pods, broken and immature flax seeds and the corticle tissue of the stem.

Buckwheat shorts or *buckwheat middlings* are that portion of the buckwheat grain immediately inside of the hull after separation from the flour.

Blood meal is ground dried blood.

Meat scrap and *meat meal* are the ground residues from animal tissue exclusive of hoof and bone. If they contain any considerable amount of bone, they must be designated meat and bone scrap, or meat and bone meal. If they bear a name descriptive of their kind, composition or origin, they must correspond thereto.

Cracklings are the residue after partially extracting the fats and oils from the animal tissue. If they bear a name descriptive of their kind, composition or origin, they must correspond thereto.

Digester tankage is the residue from animal tissue exclusive of hoof and horn, specially prepared for feeding purposes by tanking under live steam, drying under high heat, and suitable grinding. If it contains any considerable amount of bone, it must be designated digester meat and bone tankage.

Distillers' dried grains are the dried residue from cereals obtained in the manufacture of alcohol and distilled liquors. The product shall bear the designation indicating the cereal predominating.

Brewers' dried grains are the proper dried residue from cereals obtained in the manufacture of beer.

Malt sprouts are the sprouts of the barley grain. If the sprouts are derived from any other malted cereal, the source must be designated.

Alfalfa meal is the entire alfalfa hay ground, and does not contain an admixture of ground alfalfa straw or other foreign materials.

Chop is a ground or chop feed composed of one or more different cereals or by-products thereof. If it bears a name descriptive of the kind of cereals, it must be made exclusively of the entire grains of those cereals.

Screenings are the smaller imperfect grains, weed seeds and other foreign material having feeding value, separated in cleaning the grain.

The following is the summary of food and drug cases ordered referred to the district attorney, May 4, 1912:

FOOD AND DRUG CASES ORDERED REFERRED TO DISTRICT ATTORNEYS.

May 4, 1912.

Name of article.	Offense.	Manufacturer or jobber.	Accused dealer.	Locality.
Milk -----	Adulterated, below standard in fat. Mislabeled, not standard milk.	Buena Vista Market, H. F. Stoltz, Prop.	A. H. Sneed	Oakland
Pork sausage -----	Adulterated by substitution of foreign fat---		H. F. Stoltz	San Francisco
Milk -----	Adulterated, below standard in fat. Mislabeled, not standard milk.	J. Kopacevich -----		Oakland
Arrowhead water -----	Mislabeled, deficient in mineral salts. Adulterated, substitution of other waters.	Arrowhead Springs Water Co., F. A. McDonald, Secy.	(Dealer protected by guaranty.)	Los Angeles
Banana syrup -----	Mislabeled. Contains coal-tar color not declared.	A. S. Jouroyan -----		Los Angeles
Pineapple syrup -----	Mislabeled. Contains coal-tar color not declared.	Peter Pulos -----		Los Angeles
Texas Tommy cocktail, manufactured by L. A. Oyster Cocktail Co.	Mislabeled. Contains benzoates not declared.	J. B. Ingram -----	(Dealer protected by guaranty.)	Los Angeles
Frankfurter sausage Champagne -----	Contains cereal; not declared-- Adulterated. Artificially carbonated. Misla- beled. Label indicates product to be a Clicquot champagne.	Oscar Angermann -----	Oscar Angermann Maxim's Saloon -	San Francisco San Francisco

REPORT OF BUREAU OF PUBLICATIONS AND HEALTH INFORMATION.

G. P. JONES, Acting Director.

There is a great demand on the part of California citizens for information regarding the construction of the septic tank for disposal of domestic sewage and to meet this demand the Board has a supply of Bulletins and Bulletin Separates dealing with the subject in a general way. Without the services of a trained engineer it is impossible to apply the plans of a septic tank to conditions in a given locality with any guarantee of successful operation. However, the subject is covered in a manner that will no doubt make the pamphlets useful to any who contemplate the construction of a septic tank.

There is also a large supply of literature on the subject of tuberculosis; some of it designed for the use of adults and some for the special use of children. This matter will be sent free of all charge to any club, society or individual desiring it for distribution.

The following lectures were delivered by members of the staff during the month of April:

April 2d, at Berkeley, "Practical Health Administration," by John F. Leinen, before the class in Public Health and Hygiene at the University of California.

April 4th, at Berkeley, "The Operation of the Pure Food Law and Work of the State Food and Drug Laboratory," by Prof. M. E. Jaffa, before the class in Public Health and Hygiene at the University of California.

April 11th, at Berkeley, "Vital Statistics," by George D. Leslie, before the class in Public Health and Hygiene at the University of California.

April 16th, at Del Monte, "The New Division of Epidemiology of the Hygienic Laboratory of the California State Board of Health," by Dr. W. A. Sawyer, at the opening session of the annual meeting of the California State Medical Society.

April 18th, at Del Monte, "Certified Milk and Operation of the State Law With Reference to Same," by Prof. M. E. Jaffa, at the annual meeting of the California State Medical Society.

April 18th, at Del Monte, "The California Tuberculosis Commission," by Dr. William F. Snow, at the annual meeting of the California State Medical Society.

April 19th, at Berkeley, "Rabies," by Dr. W. A. Sawyer, before the class on Infection and Immunity at the University of California.

April 22d, at San Francisco, "A Typhoid Carrier on Shipboard," by Dr. W. A. Sawyer, before the California Academy of Medicine.

April 23, at Berkeley, "The Present Situation with regard to Rabies in the Vicinity of Berkeley," by Dr. W. A. Sawyer, before the Berkeley City Council.

LIST OF COUNTY HEALTH OFFICERS.

County.	Health officer.	Address.
Alameda	Dr. C. L. McKown	Niles
Alpine*	County Recorder Frank Smith	Markleeville
Amador	Dr. E. E. Endicott	Jackson
Butte	Dr. L. Q. Thompson	Gridley
Calaveras	Dr. Irwin B. March	Angels Camp
Colusa	Dr. C. A. Poage	Colusa
Contra Costa	Dr. F. S. Gregory	Pittsburg
Del Norte	Dr. E. M. Fine	Crescent City
El Dorado	Dr. L. M. Leisenring	Placerville
Fresno	Dr. W. T. Burks	Fresno
Glenn	Dr. J. A. Randolph	Willows
Humboldt	Dr. E. H. Bryant	Eureka
Imperial	Dr. Virgil McCoombs	El Centro
Inyo	Dr. I. J. Woodin	Independence
Kern	Dr. G. M. Bumgarner	Bakersfield
Kings	Dr. Ralph Motherol	Hanford
Lake	Dr. W. E. Upton	Kelseyville
Lassen	Dr. W. E. Dozier	Susanville
Los Angeles	Dr. E. O. Sawyer	Los Angeles
Madera	Dr. Mary R. Butin	Madera
Marin	Dr. J. H. Kuser	Novato
Mariposa	Dr. F. L. Wright	Mariposa
Mendocino	Dr. J. Liftchild	Ukiah
Merced	Dr. C. H. Castle	Merced
Modoc	Dr. John Stile	Alturas
Mono*	County Recorder Geo. Delury	Bridgeport
Monterey	Dr. Garth Parker	Salinas
Napa	Dr. E. Z. Hennessey	Napa
Nevada	Dr. Carl P. Jones	Grass Valley
Orange	Dr. John Wehrly	Santa Ana
Placer	Dr. O. L. Barton	Loomis
Plumas	Dr. F. D. Walsh	Quincy
Riverside	Dr. George E. Tucker	Riverside
Sacramento	Dr. Hugh Beattie	Elk Grove
San Benito	Dr. J. M. O'Donnell	Hollister
San Bernardino	Dr. Philip M. Savage	San Bernardino
San Diego	Dr. Nathan Hunt	San Diego
San Francisco	Dr. R. G. Brodrick	San Francisco
San Joaquin	Dr. R. B. Knight	Stockton
San Luis Obispo	Dr. H. M. Cox	San Luis Obispo
San Mateo	Dr. W. G. Beattie	Colma
Santa Barbara	Dr. J. C. Bainbridge	Santa Barbara
Santa Clara	Dr. William Simpson	San Jose
Santa Cruz	Dr. W. R. Congdon	Santa Cruz
Shasta	Dr. F. Stabel	Redding
Sierra	Dr. R. B. Davy	Downieville
Siskiyou	Dr. F. J. McNulty	Yreka
Solano	Dr. S. G. Bransford	Suisun
Sonoma	Dr. P. A. Meneray	Santa Rosa
Stanislaus	Dr. F. R. De Lappe	Modesto
Sutter	Dr. J. McFadyen	Yuba City
Tehama	Dr. J. S. Cameron	Red Bluff
Trinity	Dr. D. B. Fields	Weaverville
Tulare	Dr. W. A. Preston	Visalia
Tuolumne	Dr. Wm. Lyman Hood	Sonora
Ventura	Dr. A. A. Maulhardt	Oxnard
Yolo	Dr. W. J. Blevins	Woodland
Yuba	Dr. J. H. Barr	Marysville

*This county has not been able to arrange with any physician to act as health officer.

LIST OF CITY HEALTH OFFICERS.

City.	Health officer.	City.	Health officer.
Alameda	Dr. A. Hieronymus	Inglewood	Dr. H. A. Putnam
Albany	Dr. Robt. Hector	Jackson	F. V. Sanguinetti
Alhambra	Dr. F. E. Corey	Kennett	Dr. J. P. Sandholdt
Alturas	Dr. John Stile	Kernville	
Alviso		King City	
Anaheim	Dr. J. L. Beebe	Kingsburg	
Antioch	Dr. W. S. George	Lakeport	Jabez Banks
Arcadia		Larkspur	
Arcata	Dr. G. W. McKinnon	Lincoln	F. R. Elder
Arroyo Grande		Lindsay	Dr. W. W. Tourtillot
Auburn		Livermore	Dr. H. G. McGill
Azusa	Dr. L. W. Atkinson	Lodi	Dr. F. W. Colman
Bakersfield	S. D. Mullins	Long Beach	Dr. W. H. Newman
Belvedere	Dr. Florence Scott	Lompoc	
Benicia	Dr. W. L. McFarland	Lordsburg	Dr. J. E. Hubble
Berkeley	Dr. J. J. Benton	Los Angeles	Dr. L. M. Powers
Biggs	Dr. B. Caldwell	Los Banos	Dr. J. L. McClelland
Bishop	Dr. J. W. Shute	Los Gatos	Dr. C. K. Small
Blue Lake	Dr. G. N. Wood	Loyalton	Dr. G. L. Coates
Brawley	Dr. L. L. Lindsey	Madera	
Burbank		Maricopa	Dr. H. N. Taylor
Burlingame		Martinez	Dr. E. E. Brown
Calistoga		Marysville	Wm. Meek
Calexico	Dr. Wm. F. Smith	Mayfield	Dr. F. M. Seibert
Chico	G. H. Taylor	McCloud	Dr. R. T. Legge
Chino	Dr. John W. Callnon	McKittrick	G. M. Chitwood
Claremont		Merced	Dr. C. H. Castle
Cloverdale	F. P. Conner	Mill Valley	Capt. M. Staples
Coalinga	Dr. H. S. Warren	Modesto	Dr. J. J. Knowlton
Colfax		Montague	
Colton	Dr. L. A. J. La Motte	Mojave	A. Smith
Colusa	Dr. C. A. Poage	Monrovia	Dr. C. D. Gaylord
Compton	J. W. Stone	Monterey	Edward Allen
Concord	Dr. F. F. Neff	Morgan Hill	Dr. D. W. Watt
Coram	Geo. H. Thomas	Mountain View	Dr. A. H. McFarlane
Corning	Dr. W. F. Maggard	Napa	J. D. Treadway
Corona	Dr. W. H. Chapman	National City	Dr. T. F. Johnson
Coronado	Dr. Raffaele Lorini	Nevada City	Hugh Murchie
Cottonwood	Dr. A. B. Gilliland	Newman	Dr. H. V. Armistead
Covina		Newport Beach	
Crescent City		Oakdale	Elmer E. Endicott
Daly City		Oakland	Dr. E. N. Ewer
Davis	Dr. W. E. Bates	Ocean Side	Dr. R. S. Reid
Delano	Dr. H. Hildreth	Ocean Park	Dr. W. M. Kendall
Dinuba	Dr. Wm. Whittington	Ontario	Dr. C. S. Orr
Dorris	Dr. A. A. Atkinson	Orange	Dr. F. L. Champline
Dixon	W. C. Rhem	Orland	Dr. S. Goldman
Dunsmuir	Dr. W. B. Mason	Oroville	Dr. W. F. Gates
Eagle Rock	Dr. C. H. Phinney	Oxnard	Dr. Ralph W. Avery
Elsinore	Dr. Hugh Walker	Pacific Grove	Dr. W. V. Grimes
Emeryville	Dr. A. T. Drennan	Palo Alto	Hubert O. Jenkins
Escondido	Dr. David Crise	Pasadena	Dr. Stanley P. Black
Etna Mills	Dr. W. H. Haines	Paso Robles	B. B. Pierce
Eureka	Dr. L. A. Wing	Perris	A. F. Hardy
Exeter	Dr. A. D. McLean	Petaluma	Dr. J. M. Proctor
Fairfield	Dr. S. G. Bransford	Pinole	J. Chattleton
Ferndale	Dr. C. A. Phelan	Pittsburg	Dr. F. S. Gregory
Fort Bragg	Dr. L. C. Gregory	Placerville	P. J. Hall
Fort Jones	Thos. Bransom	Pleasanton	Dr. S. J. Wells
Fortuna	Dr. Geo. S. Loveren	Pomona	Dr. T. J. Wilson
Fowler	Dr. W. T. Crawford	Porterville	Dr. O. C. Higgins
Fresno	Dr. Geo. H. Aiken	Piedmont	Geo. T. Burtchael
Fullerton	Dr. F. J. Gobar	Point Arena	
Gilroy	Dr. John A. Clark	Potter Valley	
Glendale	Dr. R. E. Chase	Randsburg	E. B. McGinnes
Grass Valley	Paul E. Sears	Red Bluff	Dr. F. J. Bailey
Gridley	Dr. L. L. Thompson	Redding	L. D. Poole
Hanford	Dr. R. W. Musgrave	Redlands	Dr. Chas. E. Ide
Hayward	Dr. G. E. Reynolds	Redondo Beach	Dr. D. R. Hancock
Healdsburg	Dr. J. W. Seawell	Redwood City	Dr. J. L. Ross
Hemet	Dr. A. B. Eadie	Richmond	Dr. Chas. R. Blake
Hermosa Beach	G. A. Cleaveland	Rio Vista	Dr. A. J. McKinnon
Hercules	Dr. M. L. Fernandez	Riverside	Dr. Thos. R. Griffith
Hillsborough		Rocklin	Dr. S. P. Rugg
Hollister	Dr. R. G. Curtis	Roseville	Dr. R. H. Ashby
Hollywood	E. O. Palmer	Ross	
Huntington Beach	Dr. G. A. Shank	Sacramento	Dr. Wm. K. Lindsay
Huntington Park	Dr. W. Thompson	Saint Helena	S. H. Pettit
Imperial	Dr. C. E. Standlee	Salinas	S. A. McCollum

LIST OF CITY HEALTH OFFICERS—Continued.

City.	Health officer.	City.	Health officer.
San Anselmo	Dr. Chipman	Stockton	Dr. R. T. McGurk
San Bernardino	Dr. C. V. McConnico	Susanville	Dr. E. S. Drucks
San Diego	Dr. F. H. Mead	Suisun	_____
San Francisco	Dr. R. G. Brodrick	Stanton	_____
Sanger	Dr. T. F. Madden	Sonoma	_____
San Jose	Dr. M. F. Hopkins	Taft	E. G. Wood
San Jacinto	Thos. Lloyd	Tehachapi	R. M. Spencer
San Juan	Henry Drake	Tracy	Dr. J. G. Murrell
San Luis Obispo	Dr. P. L. Rookledge	Tehama	_____
San Rafael	Dr. W. F. Jones	Tropico	_____
San Mateo	Dr. S. G. Goodspeed	Tulare	Dr. J. B. Rosson
San Leandro	P. C. Du Bois	Turlock	Dr. E. L. Clough
Santa Ana	Dr. J. I. Clark	Ukiah	Dr. J. Liftchild
Santa Barbara	Dr. D. A. Conrad	Upland	W. C. Redman
Santa Cruz	Dr. H. E. Piper	Vacaville	Dr. A. P. Finan
Santa Clara	Dr. J. F. Beattie	Vallejo	Dr. E. A. Peterson
Santa Monica	Dr. W. H. Parker	Ventura	J. H. Hardey
Santa Paula	Dr. B. E. Murrill	Visalia	Dr. A. W. Preston
Santa Rosa	Dr. Jackson Temple	Watsonville	Dr. F. H. Koepke
Santa Maria	Dr. O. P. Paulding	Watts	Dr. E. J. Richie
Sausalito	Dr. A. H. Mays	Wheatland	Dr. A. W. Foshay
Sawtelle	Dr. A. B. Hromadka	Whittier	Dr. W. H. Stokes
Selma	Dr. F. H. Williams	Willits	Dr. W. L. Blodgett
Sierra Madre	Dr. R. H. Mackerras	Willows	Thos. Kinkade
Sebastopol	Dr. J. J. Keating	Winters	Dr. J. H. Haile
Sisson	_____	Woodland	Peter Scott
South Pasadena	Dr. C. A. Whiting	Yreka	W. D. Doggett
South San Francisco	Dr. H. G. Plymire	Yuba City	_____

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